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10/777,586	02/12/2004	Roger Howard Williams III	07-1087	4935
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DILWORTH PAXSON LLP 1500 Market Street Suite 3500 E PHILADELPHIA, PA 19102			SUBRAMANIAN, NARAYANSWAMY	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/777,586	Applicant(s) WILLIAMS, ROGER HOWARD	
	Examiner Narayanswamy Subramanian	Art Unit 3695	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 August 2009.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 105 and 107-112 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 105 and 107-112 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 - 1. Certified copies of the priority documents have been received.
 - 2. Certified copies of the priority documents have been received in Application No. _____.
 - 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

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DETAILED ACTION

1. This office action is in response to applicant's communication of August 3, 2009.

Amendments to claims 105 and 107-111 and addition of new claim 112 have been entered.

Claims 105 and 107-112 are pending in the application and have been examined. The rejections and response to arguments are stated below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 110-111 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims recite in the preamble "medium storing instructions adapted to be executed by a computer processor to perform a method for use in issuing an interest-bearing instrument in a subject market, the instrument having a debtor, a creditor, a sensitivity to parameter changes, an extension risk, a credit risk, and an underlying obligation having a principal size, an interest rate, and a payment timing". However there is no written description of any medium storing instructions adapted to be executed by a computer processor to perform the method (recited in the claim) in the specification as originally filed.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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5. Claims 105 and 107-112 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim limitations in claims 105, 107 and 112 use the phrase “means for” or “step for”, but they are modified by some structure, material, or acts recited in the claims. It is unclear whether the recited structure, material, or acts are sufficient for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph. For instance in claim 105 in the limitations “means for processing data to represent that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate; means for processing data to represent that the instrument's extension risk and credit risk, unconstrained by time, is completely subject to the creditor's and debtor's control through a calculation of an agreement upon interest rates; means for processing data to represent that any options implicit in the market for the instrument, unconstrained by time, are made explicit, priced, and used to correlatively adjust the principal size, the interest rate, and the payment timing of the underlying obligation”, the phrases “means for” are modified by sufficient structure, material or acts for achieving the specified function. Similarly in claim 112 in the limitations “third means for inputting data, including data to represent the interest-bearing instrument, including the sensitivity to parameter changes, the extension risk, the credit risk, and the underlying obligation's principal size, interest rate, and payment timing; (d) fourth means for processing data input from the third means to represent that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an

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agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate; (e) fifth means for processing data generated by the fourth means to represent that the instrument's extension risk and credit risk, unconstrained by time, is completely subject to the creditor's and debtor's control through a calculation of an agreement upon interest rates; (f) means for processing data generated by the fifth means to represent that any options implicit in the market for the instrument, unconstrained by time, are made explicit, priced, and used to correlatively adjust the principal size, the interest rate, and the payment timing of the underlying obligation; and (g) means for processing data generated by the sixth means regarding issuing the instrument”, the phrases “means for” are modified by sufficient structure, material or acts for achieving the specified function.

If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that the phrase “means for” or “step for” is clearly **not** modified by sufficient structure, material, or acts for performing the claimed function.

If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that it will clearly not be a means (or step) plus function limitation (e.g., deleting the phrase “means for” or “step for”).

Also the Examiner has broadly interpreted the “means for” to correspond to software elements of the system.

For claims 110-111, in the absence of any description of a “medium storing instructions adapted to be executed by a computer processor to perform a method for use in issuing an

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interest-bearing instrument in a subject market”, the Examiner has broadly interpreted the medium to include an intangible medium.

Independent claims 105, 108, 110 and 112 recite the limitations of “processing to represent that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate; processing data to represent that the instrument's extension risk and credit risk, unconstrained by time, is completely subject to the creditor's and debtor's control through a calculation of an agreement upon interest rates; processing data to represent that any implicit options in the market for the instrument, unconstrained by time are made explicit, priced, and used to correlatively adjust the principal size, the interest rate, and the payment timing of the underlying obligation”. It is not clear as to what is the outcome of these steps. For instance in claim 108, it is not clear as to what is the outcome of “processing in a computer processor data to represent that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate”. In a broad sense this interpreted as “processing in a computer processor data to represent a clause”. The limitation “to represent that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate” is interpreted as intended use of the step of processing in a computer processor data. It is not clear as to what is the result when the limitation “processing in a computer processor data to represent

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that the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate” has been performed. Similarly it is not clear as to what are the results if steps (c) and (d) of this method are performed. It is further not clear as to what the relationship between the step of processing in the computer processor data regarding issuing the instrument and steps (a), (b) and (c) of this method. These ambiguities render the scope of these claims unclear.

Also the limitations in these claims such as “the instrument's sensitivity to parameter changes incorporates, unconstrained by time, an agreement by the debtor and the creditor upon the principal size and the interest rate chosen from any possible combination or permutation of principal size and interest rate”, “the instrument's extension risk and credit risk, unconstrained by time, is completely subject to the creditor's and debtor's control through a calculation of an agreement upon interest rates” and “any implicit options in the market for the instrument, unconstrained by time are made explicit, priced, and used to correlatively adjust the principal size, the interest rate, and the payment timing of the underlying obligation” pre-empts every conceivable way of incorporating the instrument's sensitivity to parameter changes, pre-empts every possible control of the instrument's extension risk and credit risk, and pre-empts any implicit options in the market for the instrument. Hence unless there are specific inputs that determine the instrument's sensitivity to parameter changes, the instrument's extension risk and credit risk and the implicit options in the market for the instrument, the outcome of implementing these limitations are not determinable. Hence the scope of the claim is not clear.

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Dependent claims 107, 109 and 111 recite the limitation “processing in the computer processor data to represent pricing and capturing a value of a regulatory capital savings of the debtor or the creditor using the following equation”. It is not clear as to what is the relationship between the steps of the independent claim and “a value of a regulatory capital savings of the debtor or the creditor”. It is not clear how the data representing pricing and capturing a value of a regulatory capital savings of the debtor or the creditor is related to an interest-bearing instrument in a subject market. Further it is not clear as to how the dependent claim further limits the independent claim that it is dependent from. Hence the scope the dependent claims are unclear. Claims 107, 109 and 111 are rejected for these reasons and also by way of dependency on the rejected independent claims.

In view of these ambiguities the Examiner is unable to provide meaningful art rejection for the pending claims.

The rejections below are interpreted in view of the 112, second paragraph rejections above.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 105, 107 and 110-112 are rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory Subject matter.

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35 USC 101 requires that in order to be patentable the invention must be a "**new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof**" (emphasis added).

Claims 105, 107 and 110-112 of the disclosed invention are inoperative and therefore lack utility.

Claims 105, 107 and 112 merely recite elements of a system comprising processor means for processing data, means for storing data and several means for processing data ("means for" is interpreted to correspond to software program elements and not tangible hardware components) without showing any ability to realize functionality of the recited elements (i.e. functional descriptive material per se) and therefore are rendered inoperative lacking any utility. Note that a computer (or software program) code cannot by itself perform the underlying function until it is loaded on some computer readable memory and accessed by the computer (or a processor). Functional descriptive material, per se, is not statutory. This is exemplified in *In re Warmerdam 31 USPQ2d 1754* where the rejection of a claim to a disembodied data structure was affirmed. Thus a claim to a data structure, per se, or other functional descriptive material, including computer programs, per se, is not patent eligible subject matter.

Claims 110-111 are drawn to "a medium storing instructions". In the absence of any description of a "medium storing instructions", the Examiner has broadly interpreted the medium to include an intangible medium. Claims 110-111 merely recite elements of an intangible medium ("instructions" correspond to software program elements and not tangible hardware components) without showing any ability to realize functionality of the recited elements (i.e. functional descriptive material per se) and therefore is rendered inoperative lacking any utility.

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Note that a computer (or software program) instructions cannot by itself perform the underlying function until it is loaded on some computer readable memory and accessed by the computer (or a processor). Functional descriptive material, per se, is not statutory. This is exemplified in *In re Warmerdam* 31 USPQ2d 1754 where the rejection of a claim to a disembodied data structure was affirmed. Thus a claim to a data structure, per se, or other functional descriptive material, including computer programs, per se, is not patent eligible subject matter.

8. Claims 105 and 107-112 are rejected under 35 USC 101 because they are drawn to an abstract idea.

One possible identifying characteristic of an abstract idea is the lack of transformation of any physical subject matter according to the definition of a "process" under § 101 described in *Ex parte Lundgren* 76 USPQ2d (Bd. Pat. App. & Int. 2005) (precedential) and discussed below.

A generally recited process" claim is not limited to the means disclosed for performing it. *Id.* at 1400-01. Methods tied to a machine generally qualify as a "process" under § 101 because machines inherently act on and transform physical subject matter, *Id.* at 1400, and new uses for known machines are a "process" under 35 U.S.C. § 100(b) . The principal exception is the "special case" of general purpose machine-implemented processes that merely perform an "abstract idea" (the best known example of which is a mathematical algorithm); see *Id.* at 1407-08 (cases where machine-implemented process claims for performing mathematical algorithms were held nonstatutory). Statutory processes are evidenced by physical transformation steps, such as chemical, electrical, and mechanical steps. *Id.* at 1401. A statutory "process" involving a transformation of physical subject matter can be performed by a human. *Id.* at 1400-01. Not

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every step requiring a physical action results in a patentable physical transformation, e.g., “negotiating a contract”, “convening a meeting, etc.” *Id.*

Another possible identifying characteristic an abstract idea is if the claim is so broad that it covers (preempts) any and every possible way that the steps can be performed, because there is no “practical application” if no specific way is claimed to perform the steps. (*See p.21 of Ex-Parte Bilski et al. Appeal No. 2002-2257.* Pre-emption means a claim covers "any and every" possible way that the process is performed. It is also not definite because it fails to particularly point out how a certain process is carried out. When a method can be performed in several ways or a specific result can be obtained in many possible ways the claim pre-empts all possible ways of determining the result. In the instant case, the results can be obtained literally by innumerable combinations of the variables in the claim limitations. Also the ambiguities identified in the 35 USC 112, second paragraph rejections above indicates that the specific results of implementing the claimed methods can be obtained in many possible ways. Hence the claimed inventions preempt all possible ways of determining the result. The dependent claims are rejected for the same reason and by way of dependency on a rejected independent claim. Claims 107, 109 and 111 are rejected for the same reason and by way of dependency on a rejected independent claim.

Response to Arguments

9. In response to Applicant’s arguments “The Examiner points to language in the preamble of independent claim 110 and maintains that "there is no written description of any 'medium storing instructions adapted to be executed by a computer processor' in the specification as originally filed." (08/19/08 Office Action at 3.) But the original specification discloses that "[a]s skilled artisans will appreciate, systems that may embody or be used with the present invention

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may be implemented with a wide variety of processors, storage devices, and associated hardware and software." (Specification at p. 23, lines 29-31 .) Those skilled in the art would clearly have understood as of this Application's filing date that systems and methods embodying the invention can use processors, storage devices, and associated hardware and software - including floppy disks, CD-ROMs, and DVD-ROMs - that are known to frequently include or use "medi[a] storing instructions adapted to be executed by a computer processor." It is therefore respectfully submitted that claims 110-111 comply with the written description requirement and satisfy 35 U.S.C. § 112 ¶ 1", the Examiner respectfully disagrees. What the specification describes are the elements of any general purpose computer system that may be used to perform some of the features in the specification. The specification as filed does not describe "A medium storing instructions adapted to be executed by a computer processor to perform a method for use in issuing an interest-bearing instrument in a subject market, the instrument having a debtor, a creditor, a sensitivity to parameter changes, an extension risk, a credit risk, and an underlying obligation having a principal size, an interest rate, and a payment timing, the method comprising steps (a) – (d) listed in claim 110. What is claimed in claim 110 is a specific algorithm stored on a computer readable medium. There is no description of the specific algorithm stored on a computer readable medium in the specification as originally filed. Hence the rejection under 35 U.S.C. § 112 ¶ 1 is maintained by the Examiner.

Applicant's other arguments with respect to pending claims have been considered but are not persuasive.

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Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are listed on the enclosed PTO-892.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Narayanswamy Subramanian whose telephone number is (571) 272-6751. The examiner can normally be reached Monday-Thursday from 8:30 AM to 7:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles R. Kyle can be reached at (571) 272-6746. The fax number for Formal or Official faxes and Draft to the Patent Office is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PMR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Narayanswamy Subramanian/
Primary Examiner
Art Unit 3695

October 21, 2009